

Amendments to the Claims:

This listing of claims will replace all prior versions and listings in the application:

Listing of Claims:

Claim 1 (original): A crosslinked protein crystal, said protein crystal being capable of change from insoluble and stable form to soluble and active form upon a change in the environment surrounding said crystal, said change being selected from the group consisting of: change in temperature, change in pH, change in chemical composition, change from concentrate to dilute form, change in shear force acting upon the crystal and combinations thereof.

Claim 2 (original): The crosslinked protein crystal according to claim 1, wherein said change from concentrate to dilute form comprises a change in solute concentration.

Claim 3 (original): The crosslinked protein crystal according to claim 2, wherein said change in solute concentration comprises an increase or decrease in salt concentration.

Claim 4 (original): The crosslinked protein crystal according to claim 3, wherein said change in solute concentration comprises a decrease in salt concentration.

Claim 5 (original): The crosslinked protein crystal according to claim 2, wherein said change in solute concentration comprises an increase or decrease in water concentration.

Claim 6 (original): The crosslinked protein crystal according to claim 5, wherein said change in solute concentration comprises an increase in water concentration.

Claim 7 (original): The crosslinked protein crystal according to claim 2, wherein said change in solute concentration comprises an increase or decrease in organic solvent concentration.

Claim 8 (original): The crosslinked protein crystal according to claim 2, wherein said change in solute

concentration comprises a decrease in detergent concentration.

Claim 9 (original): The crosslinked protein crystal according to claim 2, wherein said change in solute concentration comprises a decrease in protein concentration.

Claim 10 (original): The crosslinked protein crystal according to claim 1, wherein said change from concentrate to dilute form comprises a change in concentration of all solutes from about 2-fold to about 10,000-fold.

Claim 11 (original): The crosslinked protein crystal according to claim 10, wherein said change from concentrate to dilute form comprises a change in concentration of all solutes from about 2-fold to about 700-fold.

Claim 12 (original): The crosslinked protein crystal according to claim 1, wherein said change in pH comprises a change from acidic pH to basic pH.

Claim 13 (original): The crosslinked protein crystal according to claim 1, wherein said change in pH comprises a change from basic pH to acidic pH.

Claim 14 (original): The crosslinked protein crystal according to claim 1, wherein said change in temperature comprises an increase or decrease in temperature.

Claim 15 (original): The crosslinked protein crystal according to claim 14, wherein said change in temperature is an increase in temperature from a low temperature between about 0°C and about 20°C to a high temperature between about 25°C and about 70°C.

Claim 16 (original): The crosslinked protein crystal according to claim 1, wherein said active form of said protein is a form which is active against macromolecular substrates.

Claim 17 (original): A crosslinked protein crystal, said protein crystal having a half-life of activity under storage conditions which is greater than at

least 2 times that of the soluble form of the protein that is crystallized to form said crystal that is crosslinked and activity similar to that of the soluble form of the protein under conditions of use.

Claim 18 (original): A crosslinked protein crystal, said protein crystal being capable of releasing its protein activity at a controlled rate upon exposure to a change in the environment surrounding said crystal, said change being selected from the group consisting of change in pH, change in solute concentration, change in temperature, change in chemical composition, change in shear force acting upon the crystals and combinations thereof.

Claim 19 (original): The crosslinked protein crystal according to claim 18, wherein said controlled rate of releasing protein activity is determined by a factor selected from the group consisting of: the degree of crosslinking of said crosslinked protein crystal, the length of time of exposure of protein crystal to the crosslinker, the rate of addition of the crosslinking agent to said protein crystal, the nature of the crosslinker, the chain length of the crosslinker, the surface area of said crosslinked protein crystal, the size of said crosslinked protein crystal, the shape of said crosslinked protein crystal and combinations thereof.

Claim 20 (original): The crosslinked protein crystal according to claim 18, wherein said crystal has a protein activity release rate of between about 0.1% per day and about 100% per day.

Claim 21 (original): The crosslinked protein crystal according to claim 18, wherein said crystal has a protein activity release rate between about 0.01% per hour and about 100% per hour.

Claim 22 (original): The crosslinked protein crystal according to claim 18, wherein said crystal has a protein activity release rate between about 1% per minute and about 50% per minute.

Claim 23 (original): The crosslinked protein crystal according to any one of claims 1, 17 or 18, said protein crystal being substantially insoluble and stable in a composition under storage conditions and substantially

soluble and active under conditions of use of said composition.

Claim 24 (original): The crosslinked protein crystal according to claim 23, wherein said composition is selected from the group consisting of cleaning agents, detergents, personal care compositions, cosmetics, pharmaceuticals, veterinary compounds, vaccines, foods, feeds, diagnostics and formulations for decontamination.

Claim 25 (original): The crosslinked protein crystal according to claim 24, wherein said detergent is selected from the group consisting of powdered detergents, liquid detergents, bleaches, household cleaners, hard surface cleaners, industrial cleaners, carpet shampoos and upholstery shampoos.

Claim 26 (original): The crosslinked protein crystal according to claim 24, wherein said cosmetic is selected from the group consisting of creams, emulsions, lotions, foams, washes, gels, compacts, mousses, sunscreens, slurries, powders, sprays, foams, pastes, ointments, salves, balms, shampoos, sunscreens and drops.

Claim 27 (original): The crosslinked protein crystal according to any one of claims 1, 17 or 18, wherein said protein is an enzyme.

Claim 28 (original): The crosslinked protein crystal according to claim 27, wherein said enzyme is selected from the group consisting of hydrolases, isomerases, lyases, ligases, transferases and oxidoreductases.

Claim 29 (original): The crosslinked protein crystal according to claim 28, wherein said enzyme is selected from the group consisting of proteases, amylases, cellulases, lipases and oxidases.

Claim 30 (original): The crosslinked protein crystal according to any one of claims 1, 17 or 18, wherein said protein is selected from the group consisting of therapeutic proteins, cleaning agent proteins, personal care proteins, veterinary proteins, food proteins, feed proteins, diagnostic proteins and decontamination proteins.

Claim 31 (currently amended): The crosslinked protein crystal according to any one of claims 1, 17 or 18, wherein said protein is selected from the group consisting of hormones, antibodies, inhibitors, growth factors, trophic factors, cytokines, lymphokines, toxoids, growth hormones, nerve growth hormones, bone morphogenic proteins, ~~toxoids~~, ~~vitamins~~ and nutrients.

Claim 32 (currently amended): The crosslinked protein crystal according to any one of claims 1, 17 or 18, wherein said protein is selected from the group consisting of insulin, amylin, erythropoietin, Factor VIII, TPA, dornase- α , ~~α -1-antitrypsin~~ α -1-antitrypsin, urease, fertility hormones, FSH, LSH, postinfectious hormones, tetanus toxoid and diphtheria toxoid.

Claim 33 (original): The crosslinked protein crystal according to any one of claims 1, 17 or 18, said crystal having a longest dimension of between about 0.01 μm and about 500 μm .

Claim 34 (original): The crosslinked protein crystal according to any one of claims 1, 20 or 21, said crystal having a longest dimension of between about 0.1 μm and about 50 μm .

Claim 35 (currently amended): The crosslinked protein crystal according to any one of claims 1, 17 or 18, said crystal having a shape selected from the group consisting of: spheres, needles, rods, plates, rhomboids, cubes, ~~bipyramids~~ bipyramids and prisms.

Claim 36 (original): A composition comprising a crosslinked protein crystal according to any one of claims 1, 17 or 18, said composition being selected from the group consisting of cleaning agents, detergents, personal care compositions, cosmetics, pharmaceuticals, veterinary compounds, vaccines, foods, feeds, diagnostics and formulations for decontamination.

Claim 37 (original): The composition according to claim 36, wherein said detergent is selected from the group consisting of powdered detergents, liquid detergents, bleaches, household cleaners, hard surface cleaners, industrial cleaners, carpet shampoos and upholstery shampoos.

Claim 38 (original): The composition according to claim 36, wherein said cosmetic is selected from the group consisting of creams, emulsions, lotions, foams, washes, gels, compacts, sunscreens, slurries, powders, sprays, foams, pastes, ointments, salves, balms, shampoos, sunscreens and drops.

Claim 39 (original): A protein delivery system, said system comprising crosslinked protein crystals according to any one of claims 1, 17 or 18.

Claim 40 (original): The protein delivery system according to claim 39, wherein said protein is selected from the group consisting of: detergent enzymes, cosmetic proteins, pharmaceutical proteins, agricultural proteins, vaccine proteins and decontamination proteins.

Claim 41 (original): The protein delivery system according to claim 40, said protein delivery system being a microparticulate protein delivery system.

Claim 42 (original): The protein delivery system according to claim 41, wherein said microparticulate protein delivery system comprises crosslinked protein crystals having a longest dimension between about 0.01 μm and about 500 μm .

Claim 43 (original): The protein delivery system according to claim 42, wherein said microparticulate protein delivery system comprises crosslinked protein crystals having a longest dimension of between about 0.1 μm and about 50 μm .

Claim 44 (currently amended): The protein delivery system according to claim 41, wherein said microparticulate protein delivery system comprises crosslinked protein crystals having a shape selected from the group consisting of: spheres, needles, rods, plates, rhomboids, cubes, ~~bipryamids~~ bipyramids and prisms.

Claim 45 (original): A detergent formulation comprising a crosslinked protein crystal according to any one of claims 1, 17 or 18.

Claim 46 (original): A controlled release formulation comprising a crosslinked protein crystal according to any one of claims 1, 17 or 18.

Claim 47 (original): A pharmaceutical controlled release formulation comprising a crosslinked protein crystal according to any one of claims 1, 17 or 18.

Claim 48 (original): A pharmaceutical controlled release formulation comprising a crosslinked protein crystal, said crystal being substantially insoluble under storage conditions and capable of releasing its protein activity *in vivo* at a controlled rate.

Claim 49 (original): The pharmaceutical controlled release formulation according to claim 47, said pharmaceutical being capable of administration by parenteral or non-parenteral routes.

Claim 50 (original): The pharmaceutical controlled release formulation according to claim 49, said pharmaceutical being capable of administration by oral, pulmonary, nasal, aural, anal, dermal, ocular, intravenous, intramuscular, intraarterial, intraperitoneal, mucosal, sublingual, subcutaneous or intracranial route.

Claim 51 (original): The pharmaceutical controlled release formulation according to claim 47, wherein said pharmaceutical is capable of administration by oral route and said crosslinked protein crystal is substantially insoluble under gastric pH conditions and substantially soluble under small intestine pH conditions.

Claim 52 (original): A vaccine comprising a crosslinked protein crystal according to any one of claims 1, 17 or 18.

Claim 53 (original): A formulation comprising a crosslinked protein crystal according to any one of claims 1, 17 or 18, said formulation being selected from the group consisting of tablets, liposomes, granules, spheres, microspheres, microparticles and capsules.

Claim 54 (original): A method for producing crosslinked protein crystals comprising the step of reacting protein crystals with a first crosslinking agent, or a first crosslinking agent and at least a second

crosslinking agent, under conditions sufficient to induce crosslinking of said crystals to the extent that the resulting crosslinked crystals are characterized by the ability to change from insoluble and stable form to soluble and active form upon a change in their environment, said change being selected from the group consisting of change in temperature, change in pH, change in chemical composition, change from concentrate to dilute form, change in shear force acting upon the crystals and combinations thereof.

Claim 55 (original): A method for producing crosslinked protein crystals comprising the step of reacting protein crystals with a first crosslinking agent, or a first crosslinking agent and at least a second crosslinking agent, under conditions sufficient to induce crosslinking of said crystals to the extent that the resulting crosslinked crystals are characterized by a half-life of activity under storage conditions which is greater than at least 2 times that of the soluble form of the protein that is crystallized to form said crystals that are crosslinked and activity similar to that of the soluble form of the protein under conditions of use.

Claim 56 (original): A method for producing crosslinked protein crystals comprising the step of reacting protein crystals with a first crosslinking agent, or a first crosslinking agent and at least a second crosslinking agent, under conditions sufficient to induce crosslinking of said crystals to the extent that the resulting crosslinked crystals are characterized by being capable of releasing their protein activity at a controlled rate upon exposure to a change in their environment, said change being selected from the group consisting of change in pH, change in soluble concentration, change in temperature, change in chemical composition, change in shear force acting upon the crystals and combinations thereof.

Claims 57-85 (canceled)